WHAT IS CLAIMED IS:

1. An ArF excimer laser which causes an electric discharge between discharging electrodes to excite a laser gas and oscillates a narrow-banded laser light, wherein a buffer gas contained in the laser gas mainly consists of He.

2. The ArF excimer laser according to claim 1, wherein the laser gas contains Xe.

3. A scanning type exposure device which performs exposure of an entire semiconductor chip on a wafer by moving the wafer while irradiating a pulsed laser light to each of a plurality of irradiation regions smaller than an area of the semiconductor chip, wherein a light source for oscillating the laser light is ~~the~~ ArF excimer laser according to claim 1 ~~or~~ 2

4. An ultraviolet laser device for oscillating pulsed laser by adding a trace quantity of xenon gas to gas for ultraviolet laser introduced into a chamber, and causing pulse oscillation in the chamber so as to excite the gas for ultraviolet laser to oscillate the pulsed laser, comprising:

a xenon gas cylinder in which xenon gas is sealed;

an ultraviolet laser gas cylinder in which the gas for ultraviolet laser is sealed; and

ultraviolet laser gas supply piping for connecting the ultraviolet laser gas cylinder and the chamber,

wherein a predetermined position of the ultraviolet laser

gas supply piping and the xenon gas cylinder are connected by xenon gas piping.

5. The ultraviolet laser device according to claim 4, wherein a first valve and a second valve are disposed on the ultraviolet laser gas supply piping, a third valve is disposed on mixture piping formed by the first valve, the second valve and piping therebetween, and the third valve and the xenon gas cylinder are connected by the xenon gas piping.

6. The ultraviolet laser device according to claim 5, wherein the chamber is exhausted in a state that the second valve located on the mixture piping on the side of the ultraviolet laser gas cylinder and the third valve are closed, and the first valve located on the mixture piping on the side of the chamber is opened, thereafter the xenon gas is supplied into the mixture piping by closing the first valve and opening the third valve, and when it is measured that a gas pressure in the mixture piping has reached a predetermined gas pressure, the third valve is closed, and the first valve and the second valve are opened.

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